

PROCEEDINGS
OF THE
BIOLOGICAL SOCIETY OF WASHINGTON

STUDIES IN THE TYRANNIDÆ.

II. THE RESTRICTED GENUS MYIOBIUS.

BY W. E. CLYDE TODD.

It is over nine years ago since the writer first had occasion to critically examine the status of the various members of this group, in connection with the description of a new species belonging thereto. This preliminary study sufficed to convince him that the group in question was in serious need of revision, certain of its components being but little known, and the inter-relationships of all the forms very imperfectly understood. With so much fresh material now available in the collections of the Carnegie Museum, and of the several institutions listed in Part I of the present series of papers, the time has seemed ripe for carrying out a long-cherished plan involving a fuller study of this genus. Three hundred and ninety-nine specimens in all, including types or topotypes of most of the described forms, have been examined in preparing the present paper, which follows the same general plan as the writer's recent revision of the genus *Pipromorpha*. Acknowledgments are due to the same parties as are named in that paper for the loan of material.

Genus *Myiobius* Darwin.

Platyrhynchus, part (not *Platyrinchus* Desmarest, 1805) SPIX, *Avium Species Novæ Bras.*, II, 1825, 9 (no type specified).

Tyrannula (not *Tyrannulus* Vieillot, 1816) SWAINSON, *Zool. Journ.*, III, 1827, 358 (orig. diag.; type, *Muscipeta barbata* = *Muscicapa barbata* Gmelin).

Myiobius DARWIN, *Zool. Voy. Beagle*, III, Birds, 1839, 46 (ex Gray, MS.; vice *Tyrannula* Swainson; type, *Muscicapa barbata* Gmelin).—GRAY, *List Gen. Birds*, 1840, 30 (syn.); ed. 2, 1841, 41 (syn.).—GRAY, *Gen. Birds*, I, 1845, 248, part (list of species).—GRAY, *Cat. Gen. and Subgen. Birds*, 1855, 49 (syn.).—CABANIS and HEINE, *Museum Heineanum*,

II, 1859, 67 (list of species).—SCLATER, Proc. Zool. Soc. London, 1860, 465 (crit.; list of species).—GRAY, Hand-List Birds, I, 1869, 359, part (syn.; list of species).—GIEBEL, Thes. Orn., II, 1875, 662, part (syn.; list of species).—SCLATER, Cat. Birds Brit. Mus., XIV, 1888, 198, part (syn.; monogr.).—WATERHOUSE, Ind. Gen. Avium, 1889, 139 (references).—SHARPE, Hand-List Birds, III, 1901, 131, part (list of species).—RIDGWAY, Bull. U. S. Nat. Mus., No. 50, IV, 1907, 486 (syn.; diag.; key to forms).

Early references to the birds of this group are comparatively few in number; they appear under the generic names *Muscicapa* and *Muscipeta*. Spix in 1825 described a member of the genus (as now understood) under the name *Platyrhynchus xanthopygus*, but the generic name he used had long been preoccupied. Two years later Swainson formally established the genus *Tyrannula*, designating *Muscipeta* (= *Muscicapa*) *barbata* as its type. The same name with a masculine ending had previously been used by Vieillot in 1816, and it is worth while noting that under one of the rulings of the International Commission on Zoological Nomenclature this use would not invalidate Swainson's name, which would thus become the proper designation for this genus. There seems to be a general disposition to ignore this particular ruling (a movement in which we concur), and under the circumstances we therefore pass on to *Myiobius*, which was first used by Darwin in 1839. Darwin here attributes it to Gray, and gives it as a substitute for *Tyrannula* of Swainson. This is fortunate, inasmuch as its type is thus the same as that of *Tyrannula*, and not one of the four species arranged under it at this place, none of which are now recognized as properly belonging to it. The case is parallel to that of *Pachyramphus*, a few pages farther on in Darwin's work, to which Dr. Richmond has already called attention (Proceedings U. S. National Museum, LIII, 1917, 568, note).

As used by Gray in 1845 *Myiobius* had a wide application, being even extended to include what is now known as *Myiarchus*. Cabanis, writing in 1859, was the first author to restrict it to the three closely allied species which he recognized at that time, while the following year Sclater used the name for these and a fourth species, but in a subgeneric sense only. In Volume XIV of the Catalogue of the Birds in the British Museum he admitted no less than twenty-one species under *Myiobius*, and Sharpe followed him in 1901 with twenty-eight. As used by these authors the genus included such diverse forms as to render its diagnosis virtually impossible, and it remained for Mr. Ridgway to insist upon its restriction to those originally assigned to it by Cabanis and to their immediate allies. As thus restricted the group is sufficiently homogeneous, and may be readily recognized by the following combination of characters:

Bill shorter than the head, typically Tyrannine, flat, wide at base, with strongly ridged culmen and decurved tip, terminally compressed in vertical outline, the lateral outlines nearly straight and sub-parallel basally. Nostrils oval, in basal half of bill. Rictal bristles excessively developed, reaching beyond tip of bill when directed forward, and feathers of chin with more or less bristly points. Wings moderate, rounded, the tenth (outer-

most) primary shorter than the secondaries, the sixth, seventh and eighth subequal and longest, and with outer webs slightly sinuate. Tail varying from about five-sixths of to equal to the wing, even or somewhat rounded, the feathers rather broad, with sub-acuminate tip. Feet moderate, the hind claw about equal to hind toe, the other claws much weaker; outer toe united to middle toe for the whole of its basal phalanx, and inner toe united to middle toe for about half of its basal phalanx. Coloration olive greenish, the pileum (in adult males) with a partially concealed vertical patch of yellow, the rump yellow; tail blackish; under parts yellowish, buffy, or more or less ochraceous.

As is often the case with such homogeneous genera, the discrimination of the several forms belonging to this group presents a problem of exceptional difficulty, even for the Tyrannidæ. Before attempting to present our own views it may be well to give a brief historical resumé of the subject. The first species to be formally described was the *Muscicapa barbata* of Gmelin, 1788, from Cayenne, based on Buffon's figure and account. Then came the *Muscicapa mastacalis* of Wied, 1821, and the *Platyrrhynchus xanthopygus* of Spix, 1825, both names referring to the bird of Brazil. In 1857 Sclater described a third member of the group from Mexico, *Tyrannula sulphureipygia*, using Swainson's generic name. In the meantime *Myiobius* had come into common use for the group, as well as for certain more remotely related forms, so that when Sclater described a fourth species from Ecuador in 1860 he called it *Myiobius villosus*. In 1863 Lawrence pointed out distinctive characters for the Central American bird, which up to that time had passed as *barbatus*, calling it *atricaudus*, but subsequent authors were by no means a unit in accepting this name. In fact, the true application of the term *barbatus*, although properly indicated, it is true, by Cabanis in 1859, was not appreciated for many years, due largely to scarcity of specimens, the name being used indiscriminately for several perfectly distinct forms. The resultant confusion in the nomenclature may be imagined. In 1888 we find von Berlepsch describing a sixth species, *M. ridgwayi*, and Sclater still refusing to admit *atricaudus* to recognition except as a subspecies, while at the same time confusing "*xanthopygius*" (= *mastacalis*) with *barbatus*. In 1906 Mr. Hellmayr pointed out characters for separating *barbatus*, *mastacalis*, and *atricaudus*, which he regarded as subspecies, while keeping *ridgwayi* specifically distinct. Mr. Ridgway in 1907 arranged the forms somewhat differently, keeping "*xanthopygius*," *sulphureipygius*, and *villosus* together as conspecies, and similarly uniting *barbatus* and *atricaudus*, leaving *ridgwayi* to stand by itself. Mr. Hellmayr in 1911 again insisted that the Brazilian form, *mastacalis*, had nothing to do with *sulphureipygius*. In the meantime a southern race of the latter had been worked out by Mr. Bangs. The next year the present writer described a new form, *modestus*, allied to *atricaudus*, from Venezuela, and later on another close ally of the same, *suffusus*, as well as a very distinct species, *semiflavus*, both from Colombia. This brings the history of the group down to date.

With such diverse treatment from leading authorities it is little wonder that the literature of the group is in such a confused state, nor do we flatter

ourselves that our efforts to disentangle its complicated synonymy have been entirely successful. Good series of specimens are absolutely necessary in a case of this kind, and it is easy to see how much of this confusion has arisen when we remember the amount and kind of material with which authors generally have had to deal. With an unusually large and finely prepared series of specimens for study we are satisfied that the tendency toward the reduction in the number of specific types has gone too far in this genus, if not also in other genera of the Tyrannidæ. If *M. ridgwayi* is specifically distinct, so also is *M. mastacalis* from *M. barbatus*, which can invariably be distinguished one from the other by characters fully as good as those which apply to *M. ridgwayi*. *M. atricaudus*, as shown beyond, is not so closely related to *M. barbatus* as has generally been supposed, and very probably their respective ranges overlap. *M. semiflavus*, an extreme development of *M. barbatus*, inhabits a region adjacent to that occupied by a race of *M. atricaudus*, with no sign of intergradation. *M. atricaudus* and *M. sulphureipygius aureatus* are known to occur together, and Dr. Chapman has lately shown that *M. villosus*, as the Subtropical Zone representative of the latter, must be distinct specifically. In short, there is every reason to believe that the forms whose ranges adjoin are fully as distinct from each other as those whose ranges are actually known to overlap. In discussing the case of *Eupsychortyx* (Auk, XXXVII, 1920, 213), we have already had occasion to animadvert upon this matter, and we here reiterate our belief that the fact of geographical collocation ought not to constitute the sole (or even the principal) criterion for the recognition of species as distinguished from subspecies. Take the case of the genus *Empidonax*, for example—a storm-center for many years among American ornithologists—whose members are now known to be distinct but closely allied species, distinguished by slight but constant characters, and different in life, nesting, etc. Caution is certainly necessary when dealing with such a family as the Tyrannidæ, in which slight differences often have great value. We are convinced that in the case of *Myiobius* we have to do, as in *Empidonax*, with a group of closely related but in the main distinct species, and we venture to predict that when their life-histories come to be as well known as are those of the North American *Empidonaces* similar differences in their notes, haunts, nests, and eggs will come to light.

Viewing the group as a whole, therefore, and essaying a consistent treatment on the above lines, we would recognize seven species and four additional subspecies, ranging from southeastern Mexico to southern Brazil, mainly in the Tropical Zone. The key which follows, although not strictly dichotomous, is believed to indicate approximately their real relationships and place them in their natural order as nearly as may be.

Key to the Species and Subspecies of Myiobius.

- A. Wing longer than tail; tail nearly or quite even; under parts greenish or yellowish, with little or no buffy.
 - a. No ochraceous color on breast and sides.
 - b. Rump barium yellow; under parts Martius yellow, more or less shaded anteriorly and laterally with old gold.

Myiobius mastacalis.

- b'. Rump and under parts (posteriorly) Martius yellow, the breast more or less shaded with citrine, the throat deep colonial buff.....*Myiobius barbatus.*
- b''. Rump and under parts pale lemon yellow, the breast and sides shaded with pyrite yellow or yellowish citrine; throat Martius yellow.....*Myiobius semiflavus.*
- a'. Breast and sides distinctly washed with ochraceous.
- b. Smaller (wing of male averaging 65 mm.; tail, 54.5 mm.); upper parts brighter green.
- c. Color of breast and sides darker, and yellow of under parts duller and less extended posteriorly.
Myiobius sulphureipygius sulphureipygius.
- c'. Color of breast and sides paler, and yellow of under parts clearer and more extended posteriorly.
Myiobius sulphureipygius aureatus.
- b'. Larger (wing of male averaging 70 mm.; tail, 61 mm.); upper parts darker green.
- c. Brighter; rump Martius yellow; breast and sides orange citrine.....*Myiobius villosus villosus.*
- c'. Paler; rump baryta yellow, breast and sides old gold.
Myiobius villosus peruvianus.
- A'. Wing nearly or quite equal to tail; tail obviously rounded; under parts more or less buffy.
- a. Rump Martius yellow; under parts barium yellow, with more or less buffy suffusion.
- b. Above paler; under parts duller, more uniformly buffy, less yellowish.....*Myiobius atricaudus modestus.*
- b'. Above paler; under parts paler and more uniform, breast less buffy.....*Myiobius atricaudus suffusus.*
- b''. Above darker; under parts barium yellow, anteriorly shaded with old gold or honey yellow.
Myiobius atricaudus atricaudus.
- a'. Rump and entire under parts uniform yellowish buff.
Myiobius ridgwayi.

***Myiobius mastacalis* (Wied).**

Muscicapa mastacalis WIED, Reise nach Brasilien, II, 1821, 151 (Rio Catolé, Bahia, Brazil; orig. descr.; types now in coll. Am. Mus. Nat. Hist.).

Muscipeta barbata (not *Muscicapa barbata* Gmelin) Swainson, Zool. Illustrations, II, 1822, pl. 116 and text, excl. syn. (Pitanga ["twenty leagues west of Bahia"], Brazil; descr.; crit.).—WIED, Beiträge Naturg. Bras., III, 1831, 934 (Brazil; references; descr.; habits).

Platyrhynchus xanthopygus Spix, Avium Species Novæ Bras., II, 1825, 9, pl. 9, fig. 1 ([Rio de Janeiro], Brazil; orig. descr.; type in coll. Munich Mus.).

Tyrannula barbata Hartlaub, Syst. Verz. Nat. Samm. Ges. Mus. [Bremen], 1844, 50 (Brazil; Swainson's reference).

- Myiobius barbatus* BURMEISTER, Syst. Ueber. Thiere Bras., II, 1856, 501, excl. syn. part (Brazil; descr.; references; habits).—ALLEN, Bull. Am. Mus. Nat. Hist., II, 1889, 275, note (crit. on Wied's types).—GÆLDI, Aves do Brazil, 1894, 326 (Brazil).—KÆNIGSWALD, Journ. f. Orn., XLIV, 1896, 359 (Estado de São Paulo, Brazil; Brazilian references).—VON IHERING, Rev. Mus. Paulista, III, 1898, 201 (diag.; Brazilian references; range).—EULER, Rev. Mus. Paulista, IV, 1900, 49 (Brazil; nesting).—VON IHERING, Rev. Mus. Paulista, IV, 1900, 155 (Cantagallo and Nova Friburgo, Brazil), 236 (nesting).—OATES and REID, Cat. Birds' Eggs Brit. Mus., III, 1903, 203 (Rio Janeiro, Brazil; descr. eggs).—VON IHERING, Auk, XXI, 1904, 315 (nest).—HAGMANN, Bol. Mus. Gældi, IV, 1904, 11 (Spix's reference), 23 (Wied's reference) 47 (Burmeister's reference), 88, part (von Pelzel's reference).—SNETHLAGE, Bol. Mus. Gældi, V, 1907, 49, part (Ourem, Rio Guama, and Rio Tapajoz, Brazil).—VON IHERING, Aves do Brazil, 1907, 289, part (Brazil; range).—SNETHLAGE, Journ. f. Orn., LVI, 1908, 495, in text, 503 (Goyana, Rio Tapajoz, Brazil), 528 (Arumatheua, Rio Tocantins, Brazil).—SNETHLAGE, Bol. Mus. Gældi, VIII, 1914, 391, part (localities in lower "Amazonia"; descr.).
- Myiobius xanthopygus* CABANIS and HEINE, Mus. Heineanum, II, 1859, 67 (Bahia, Brazil; references; crit.).—EULER, Journ. f. Orn., XVI, 1868, 185 (Cantagallo, Brazil; nest and eggs).—CABANIS, Journ. f. Orn., XXII, 1874, 88 (Cantagallo, Brazil).—GIEBEL, Thes. Orn., II, 1875, 668 (range; syn.).—HEINE and REICHENOW, Nom. Mus. Heineani Orn., 1883, 144 (Bahia, Brazil).—VON BERLEPSCH, Auk, V, 1888, 457, 458, in text (Bahia, Brazil; crit.).—SHARPE, Hand-List Birds, III, 1901, 131 (range, in part).
- Myiobius xanthopygius* SCLATER, Proc. Zool. Soc. London, 1860, 465 (in list of species; range).—SCLATER, Cat. Am. Birds, 1862, 225 (Brazil; references).—GRAY, Hand-List Birds, I, 1869, 359 (ref. orig. descr.; range).—VON PELZELN, Orn. Bras., ii, 1869, 113, part (Registo do Sai, Brazil; meas.; crit.); iv, 1870, 426 (Bahia, Brazil; Brazilian records).—VON PELZELN, Nunquam Otiosus, II, 1872, 292 (Neu Freiburg, Brazil).—VON BERLEPSCH, Orn. XIV, 1907, 481, in text (crit.).
- [*Myiobius barbatus*] b. subsp. *typica* SCLATER, Cat. Birds Brit. Mus., XIV, 1888, 200, part ("Amazons" and Bahia, Brazil; references).
- Myiobius barbatus* var. *xanthopygia* DUBOIS, Syn. Avium, I, 1902, 245 (ref. orig. descr.; range).
- Myobius barbatus barbatus* HELLMAYR, Nov. Zool., XIII, 1906, 362, part (Pará, Brazil; crit.); XIV, 1907, 357 (Humaytha, Rio Madeira, Brazil).
- Myiobius barbatus mastacalis* HELLMAYR, Nov. Zool., XIII, 1906, 362, in text (Bahia, Brazil).—HELLMAYR, Abhand. K. Bayerischen Akad. Wiss., II Kl., XXII, 1906, 641 (Brazilian references and localities; meas.; crit.).—VON IHERING, Aves do Brazil, 1907, 290 (Estado de São Paulo, Ubatuba, and Iguape, Brazil; Brazilian localities and references).—HELLMAYR, Nov. Zool., XV, 1908, 51 (Fazenda Esperanca, Goyaz, Brazil; crit.); XVII, 1910, 299 (Maruins, Marmellos, and Humaytha, Rio Madeira, Brazil; crit.).—HELLMAYR, Proc. Zool. Soc. London, 1911,

1135, 1136 (range; crit.).—HELLMAYR, Abhand. K. Bayerischen Akad. Wiss., Math.-phys. Kl., XXVI, 1912, 26, 90 (Peixe-Boi and San Antonio do Prata, Brazil; range; crit.).—VON IHERING, Rev. Mus. Paulista, IX, 1914, 440, 480, pl. 8, fig. 9, pl. 9, fig. 3 (nest and eggs).

Myiobius xanthopygus xanthopygus RIDGWAY, Bull. U. S. Nat. Mus., IV, 1907, 487 (diag.; references).

Myiobius mastacalis TODD, Ann. Carnegie Mus., VIII, 1912, 208, in text (crit.).—BRABOURNE and CHUBB, Birds S. Am., I, 1912, 296 (ref. orig. descr.; range).

Description.—Male: above olive green, the pileum with a partially concealed median vertical spot of lemon chrome; rump barium yellow; wings dusky, externally more or less light brownish olive, the remiges edged with buffy below; tail and upper tail-coverts plain dark brown or dusky; under parts Martius yellow, the throat and sides of the head paler and duller, the breast, sides, and crissum more or less shaded with old gold; "iris brown; feet flesh gray; bill black above, pale below." Female similar, but smaller, and the vertical spot wanting or reduced to a trace.

Measurements.—Male: wing, 64–71 (66.5); tail, 55–61 (58); bill, 10.5–11.5 (11); tarsus, 15.5–17 (16.5). Female: wing, 55–62 (59); tail, 50–54 (52.5); wing, 10–11 (10.5); tarsus, 13.5–15 (15).

Range.—Brazil, from the Amazon and Madeira Rivers south to São Paulo and east to Bahia.

Remarks.—This species was described by Maximilian, Prince of Wied, just one hundred years ago, his types being still preserved in the American Museum of Natural History. Four years later it was given another name by Spix, but in the meantime Wied had concluded that his bird was identical with the *Muscicapa barbata* of Gmelin, and in 1859, when Cabanis finally became satisfied that the Brazilian bird was really distinct from that of Cayenne, it was Spix's name and not Wied's that was adopted. Not until 1906, indeed, when Mr. Hellmayr critically examined Spix's types, pointing out the pertinence and priority of Wied's name, did *mastacalis* finally come into use. Numerous authors had in the meantime followed Selater's lead in denying recognition to the Brazilian form, and with the nomenclature of the group in such a confused state it was little wonder that without adequate material for comparison they could not agree. The late Count von Berlepsch, however, expressed a decided opinion on this point in 1888, which was fully indorsed by Mr. Hellmayr in 1912. We can not follow this eminent authority, however, in considering *M. mastacalis* only subspecifically separable from *M. barbatus*. While the two forms are undoubtedly closely related, we have yet to see a specimen that can not be unequivocally referred to one or the other. In *mastacalis* the rump and under surface are obviously paler than in *barbatus*—barium yellow or naphthalene yellow, instead of picric yellow or Martius yellow—and the latter is shaded with old gold instead of citrine. There is a marked variation, however, in the amount of this shading, some specimens lacking it entirely (except on the tibiæ and crissum), while in others it is conspicuous. These differences appear to be correlated with a variation in the color of the upper parts, the examples with the most buffy suffusion having the

back and wings obviously tinged with brownish, while in those with uniform under parts the upper surface is a purer olive green. In the latter phase the bird more nearly resembles *barbatus*, and it is easy to understand how with only a few specimens it should have been thus allocated by sundry authors. Our series shows, however, that to whatever cause these variations may be attributed they are certainly not geographical in character.

M. mastacalis was described from the Rio Catolé, in the province of Bahia, Brazil, and a year later was again recorded from the Bahia region by Swainson. Spix's type of *xanthopygus* came from Rio de Janeiro. In more recent years the species has been traced north to the Amazon, west to the Madeira, and south to the state of São Paulo, so that it appears to occupy by far the larger part of Brazil. Euler describes the nest as an oblong structure, with the entrance on one side, and a kind of conical roof all around. The eggs are two in number, white, with a rosy blush, with a wreath of dark reddish and violet reddish spots around the larger end.

Specimens examined.—Brazil: Benevides, 2; Colonia do Mojuy, 4; Villa Braga, 9; Miritituba, 7; Boim, Rio Tapajoz, 1; Cameta, Rio Tocantins, 3; Arumatheua, Rio Tocantins, 3; Victoria, Rio Xingu, 1; Apehu, 1; Ourem, Rio Guama, 2; Santa Julia, Rio Iriri, 1; San Antonio do Prata, 2; Ilhios, Bahia, 1; Bahia, 6; Baron Melgaco, Matto Grosso, 1; Broken Canoe Rapids, Rio Roosevelt, Matto Grosso, 1. Total, 45.

Myiobius barbatus (Gmelin).

"Barbichon de Cayenne, mas" D'AUBENTON, Pl. Enlum., 1778, 830, fig. 1.

—BUFFON, Hist. Nat. Oiseaux, IV, 1778, 534, part (Cayenne, French Guiana; descr. male; habits).

"Whiskered Flycatcher" LATHAM, Gen. Syn. Birds, II, i, 1782, 364, part (Cayenne, French Guiana; descr. male; habits; ex Buffon).—STEPHENS, in Shaw's Gen. Zool., X, ii, 1817, 352, part (Cayenne, French Guiana; references; descr. male; habits).—LATHAM, Gen. Hist. Birds, VI, 1823, 245, part (Cayenne, French Guiana; references; descr. male; habits).

Muscicapa barbata GMELIN, Syst. Nat., I, ii, 1789, 933 (Cayenne, French Guiana, ex Buffon et Latham; diag.).—LATHAM, Ind. Orn., II, 1790, 488, part (Cayenne, French Guiana; diag. male; references).—STRICKLAND, Ann. and Mag. Nat. Hist., (1), VII, 1841, 28, in text (taken as type of *Tyrannula* Swainson).

Myiobius barbatus CABANIS, Arch. f. Naturg., 1847, 248 (designated as type of *Myiobius*).—GRAY, Gen. Birds, I, 1845, 249 (in list of species; references).—CABANIS, in Schomburgk, Reisen in Britisch-Guiana, III, 1848, 701 (British Guiana).—CABANIS and HEINE, Mus. Heineanum, II, 1859, 67, note (references).—SCLATER, Proc. Zool. Soc. London, 1859, 45 (range); 1860, 465, part (in list of species; range).—SCLATER and SALVIN, Proc. Zool. Soc. London, 1867, 751, and 1873, 281 (Xeberos and Chyavetas, Peru).—VON PELZELN, Orn. Bras., ii, 1869, 113 (Borba [?] and Marabitanas, Brazil); iv, 1870, 426 (Brazil, ex Lichtenstein).—GRAY, Hand-List Birds, I, 1869, 359 (in list of species; range).—SCLATER and SALVIN, Nom. Avium Neotrop., 1873, 51, part (range).—GIEBEL, Thes. Orn., II, 1875, 663 (syn.; range).—SALVIN, Cat. Strickland Coll.,

- 1882, 312 ("S. America"; references).—TACZANOWSKI, Proc. Zool. Soc. London, 1882, 21 (Yurimaguas, Peru).—TACZANOWSKI, Orn. Perou, II, 1884, 298 (Xeberos, Chyavetas, and Yurimaguas, Peru; descr.; references).—SALVIN, Ibis, 1885, 297 (Bartica Grove, Merumé Mountains, Camacusa, Mount Roraima, and Atapurow River, British Guiana).—TRISTRAM, Cat. Coll. Birds, 1889, 124 (Cayenne, French Guiana).—SHARPE, Hand-List Birds, III, 1901, 131 (range).—VON BERLEPSCH and HARTERT, Nov. Zool., IX, 1902, 49 (Suapure and La Pricion, Caura River, Venezuela; British Guiana; crit.).—DUBOIS, Syn. Avium, I, 1902, 245 (references; range).—SNETHLAGE, Bol. Mus. Goeldi, V, 1907, 49, part (Bom Lugar, Rio Purús, Brazil).—VON BERLEPSCH, Ornith., XIV, 1907, 481, in text (crit.).—VON BERLEPSCH, Nov. Zool., XV, 1908, 129 (Ipousin, Rio Approuage, and Oyapoc, French Guiana).—PENARD, Vogels van Guyana, II, 1910, 254 (Guiana; descr.; habits; crit.).—TODD, Ann. Carnegie Mus., VIII, 1912, 208, in text (crit.).—BRABOURNE and CHUBB, Birds S. Am., I, 1912, 296 (ref. orig. descr.; range).—SNETHLAGE, Bol. Mus. Goeldi, VIII, 1914, 391, part (St. Antonio do Cachoeira and Obidos, Brazil).—CHUBB, Birds Brit. Guiana, II, 1921, 215 (British Guiana localities and references; descr.).
- Myiobius barbata* BONAPARTE, Consp. Avium, I, 1850, 187 (range; references [part]).
- Myiobius xanthopygius* (not *Platyrrhynchus xanthopygus* Spix) SCLATER, Proc. Zool. Soc. London, 1866, 189 (upper Ucayali River, Peru).
- [*Myiobius barbatus*] b. subsp. *typica* SCLATER, Cat. Birds Brit. Mus., XIV, 1888, 200, part (Bartica Grove, Atapurow River, Camacusa, and Mount Roraima, British Guiana; Oyapoc, French Guiana; references).
- Myiobius sulphureipygus* (not of Sclater) MENEGAUX, Bull. Mus. d'Hist. Nat. Paris, 1904, 118 (Saint Georges d'Oyapock and Saint Jean du Maroni, French Guiana; range).
- Myiobius barbatus barbatus* HELLMAYR, Abhand. K. Bayerischen Akad. Wiss., II Kl., XXII, 1906, 642 (ref. orig. descr.; diag.; range; Natterer's specimens).—RIDGWAY, Bull. U. S. Nat. Mus., No. 50, IV, 1907, 487 (diag.; references).—HELLMAYR, Nov. Zool., XIII, 1906, 362, part (British Guiana and Caura River, Venezuela; crit.); XIV, 1907, 357, part (British Guiana); XVII, 1910, 299 (Borba, Rio Madeira, Brazil, ex von Pelzeln; crit.).—HELLMAYR, Proc. Zool. Soc. London, 1911, 1135, 1136 (range; crit.).—CHERRIE, Mus. Brooklyn Inst. Sci. Bull., II, 1916, 242 (Caura River, Venezuela, ex von Berlepsch and Hartert).—CHAPMAN, Bull. Am. Mus. Nat. Hist., XXXVI, 1917, 465 (Florenca and La Morelia, Colombia; British Guiana).—BANGS and PENARD, Bull. Mus. Comp. Zool., LXII, 1918, 78 (Jaraweg, Dutch Guiana).
- Myiobius barbatus* subsp. SNETHLAGE, Journ. f. Orn., LVI, 1908, 11 (Bom Lugar, Rio Purús, Brazil; crit.).
- Myiobius barbatus xanthopygus* SNETHLAGE, Bol. Mus. Goeldi, VIII, 1914, 391 (Bom Lugar, Rio Purús, Brazil; diag.).
- Description.*—Male: above olive green, the pileum with a partially concealed median vertical spot of lemon chrome; rump Martius yellow; wings dusky brown, externally buffy brown or buffy olive, the secondaries

especially; upper tail-coverts and tail brownish black; throat deep colonial buff, the breast more or less strongly shaded with citrine, passing into Martius yellow posteriorly; tibiae buffy citrine; crissum old gold; under wing-coverts buffy yellow; inner margins of remiges buffy below; "iris brown; feet dark plumbeous; bill black, flesh-color below." Female similar, but the vertical spot wanting or merely indicated in buffy or ochraceous.

Measurements.—Male: wing, 64–69 (66); tail, 53–61 (57); bill, 10–11 (10.4); tarsus, 15.5–18 (16.4). Female (seven specimens); wing, 58–61 (60); tail, 51–54 (52); bill, 10–10.5 (10.3); tarsus, 13.5–17 (14.8).

Range.—Guiana, west through central and southern Venezuela to Colombia (east of the Andes), and south to the north bank of the Amazon and through upper "Amazonia" to eastern Peru.

Remarks.—The "Barbichon de Cayenne," male, of Buffon and D'Aubenton is the basis of Gmelin's name for this species, the figure being easily recognizable. Latham and Stephens, the next authors to notice the species, merely copied Buffon's account. So far as we know Swainson had no specimens of this form before him when he made it the type of his new genus *Tyrannula*, but only of the Brazilian bird (*mastacalis*). Cabanis, who in due course had access to examples collected by Schomburgk in British Guiana, is the first author to clearly recognize the distinctness of the present bird. Whitely also secured specimens in British Guiana, and in more recent years numerous other specimens have been taken in French and Dutch Guiana, Venezuela, and thence westward to the foot of the Andes in Colombia. Without having examined the specimens on which the records are based it is impossible to be sure, of course, but we are inclined to place the records for northeastern Peru here rather than under *M. atricaudus*, mainly on geographical grounds. The measurements for one of the specimens given by Taczanowski indicate a bird of the present form, and not *atricaudus*, which averages smaller. The wing-measurement of the other specimen, given as "59" millimeters, may be an error for 69. It is extremely unlikely that *atricaudus* would be found on both sides of the Andes in Peru, judging by analogy. For Brazil, Mr. Hellmayr finds that Natterer's specimens from Marabitanas on the Rio Negro and from Borba on the lower Rio Madeira belong here. A specimen, easily referable to this form, from Avojutuba, on the Rio Negro, appears to confirm the Marabitanas record, but we may be excused for venturing to doubt the Borba record in view of the range of variation known to obtain in *M. mastacalis*. It is more likely that the Rio Madeira separates the respective ranges of *mastacalis* and *barbatus*, but further field-work alone can demonstrate this. Miss Sneathlage has recorded two specimens from Bom Lugar, on the Rio Purús, which from the description are almost certainly *barbatus*. The indications are, therefore, that this form has an extensive range in northern South America, from Guiana on the east to Colombia and Peru on the west. Individual variation is very much less than in *mastacalis*, from which the present form may always be told by its much brighter yellow rump and under surface, which latter is shaded with citrine, not buffy or old gold.

Specimens examined.—Colombia: La Murelia, Caqueta, 1. Venezuela: Rio Yuruan, 3; Suapure, 2. British Guiana: Mount Roraima, 3; Camacusa, 1; unspecified, 1. French Guiana: Tamanoir, 16; Pied Saut, 4. Brazil: Obidos, 4; Colonia do Veado, Obidos, 1; St. Antonio do Cachoeira, 1; Manacapuru, 1; Avojutuba, Rio Negro, 1. Total, 39.

***Myiobius semiflavus* Todd.**

Myiobius semiflavus TODD, Proc. Biol. Soc. Washington, XXXII, 1919, 114 (El Tambor, Santander, Colombia; orig. descr.; type in coll. Carnegie Mus.).

Description.—Male: above plain olive green, the pileum with a partially concealed vertical spot of empire yellow, the rump pale lemon yellow; wings dusky, the remiges margined externally with buffy citrine, most conspicuous basally and on the secondaries; upper tail-coverts and tail dull black; beneath (including under wing-coverts) pale lemon yellow, the throat and crissum still paler (Martius yellow), the breast and sides shaded with pyrite yellow or yellowish citrine; tibiæ usually more or less shaded with citrine; inner margins of remiges buffy below; "iris brown; feet pale leaden blue; bill black, flesh-color below." Female similar, but the vertical spot wanting or merely indicated.

Measurements.—Male (four specimens): wing, 65–68 (66); tail, 53–59 (56.5); bill 11–12 (11.5); tarsus, 17–18.5 (17.5). Female (three specimens): wing, 62–64 (63); tail, 51–56 (54); bill, 10.5–11 (10.7); tarsus, 15–17 (16).

Range.—Known only from the type-locality, in the valley of the Rio Lebrija, northeastern Colombia.

Remarks.—This species is easily distinguished by its generally rich coloration and decidedly yellow under parts, which are much brighter than in any other form of this group. Although perfectly distinct, it seems to be most closely related to *M. barbatus*, and may have been developed therefrom by isolation. Certainly it has nothing to do with *M. atricaudus*, one of whose forms it approximates geographically. It is known at present only from the seven specimens listed below, but will probably be found to have a more extensive range, covering perhaps the whole of the valley of the middle Magdalena.

Specimens examined.—Colombia: El Tambor, 7.

***Myiobius sulphureipygius sulphureipygius* (Sclater).**

Tyrannula sulphureipygia SCLATER, Proc. Zool. Soc. London, "1856," 1857, 296 (Cordova, Vera Cruz, Mexico; orig. descr.; type now in coll. Brit. Mus.).

Myiobius citrinopygus CABANIS and HEINE, Mus. Heineanum, II, 1859, 67, note (Mexico; new name for *Tyrannula sulphureipygia* Sclater, on grounds of purism).—HEINE and REICHENOW, Nom. Mus. Heineani Orn., 1883, 144 (Mexico; syn.).

Myiobius sulphureipygius SCLATER, Proc. Zool. Soc. London, 1859, 45 (range), 384 (Playa Vicente, Oaxaca, Mexico).—SCLATER, Ibis, 1859,

- 442 (Cordova, Mexico).—SALVIN and SCLATER, *Ibis*, 1860, 399 (Choctum, Guatemala).—SCLATER, *Proc. Zool. Soc. London*, 1860, 465 (orig. descr.; syn.; range).—SCLATER, *Cat. Am. Birds*, 1862, 226 (Cordova, Mexico, and Choctum, Guatemala).—GRAY, *Hand-List Birds*, I, 1869, 359 (in list of species; range).—SUMICHRAST, *Mem. Boston Soc. Nat. Hist.*, I, 1869, 557 ("tierra caliente," Vera Cruz, Mexico).—SCLATER and SALVIN, *Nom. Av. Neotrop.*, 1873, 51, part (Mexico, in range).—SCLATER, *Cat. Birds Brit. Mus.*, XIV, 1888, 200, part (Mexican, Guatemalan, and British Honduras references and localities; descr.).—SALVIN and GODMAN, *Biol. Centr.-Am., Aves*, II, 1889, 57, part (Mexican, Guatemalan, and British Honduras localities and references; descr.; crit.).—SALVIN, *Ibis*, 1889, 360, and 1890, 87 (Cozumel I., Yucatan).—LANTZ, *Trans. Kansas Acad. Sci.*, "1897-98," 1899, 222 (Cayo, British Honduras).—SHARPE, *Hand-List Birds*, III, 1901, 131, part (range).
- Myiobius sulphureipygia* DUBOIS, *Syn. Avium*, I, 1902, 245, part (references; range; syn.).
- Myiobius xanthopygus sulphureipygius* RIDGWAY, *Bull. U. S. Nat. Mus.*, No. 50, IV, 1907, 487, part (diag.), 490, part (descr.; range; meas.; references).—BANGS, *Proc. New England Zool. Club*, IV, 1908, 27, 28, in text (crit.).—PETERS, *Auk*, XXX, 1913, 376 ("30 miles north of Camp Mengel," Quintana Roo, Mexico).
- Myiobius sulphureipygius sulphureipygius* HELLMAYR, *Proc. Zool. Soc. London*, 1911, 1135, 1136 (range; crit.).

Description.—Above dull olive green, the pileum and nape more or less suffused with brownish, the former with a partially concealed vertical spot of light cadmium or lemon chrome; rump picric yellow or Martius yellow; upper tail-coverts and tail dull black; wings dusky, margined externally with buffy brown; throat dull white, shaded with yellow posteriorly; breast, sides of head and neck, and abdomen laterally strongly suffused with ochraceous or antimony yellow, leaving only the middle of the abdomen pale yellow (barium yellow); tibiæ brownish olive; crissum more or less buffy brown; "iris dark hazel; bill horn brown above, mostly whitish below; feet blue." (Female with the yellow vertical patch restricted, merely indicated, or wanting).

Measurements.—Male (seven specimens): wing, 64-69 (66); tail, 54-59 (56); bill, 10-12.5 (11.5); tarsus, 17-18 (17.5). Female (four specimens): wing, 59-63 (61); tail, 50-53 (52); bill, 10-10.5 (10.3); tarsus, 16-16.5 (16.3).

Range.—States of Vera Cruz and Oaxaca, Mexico, east and south to Yucatan, British Honduras, and Guatemala, in the Tropical Zone.

Remarks.—"The first specimens of this species sent to Europe were probably those obtained by Deppe at Valle Real in Mexico, which remained undescribed under Lichtenstein's MS. name, *M. mexicanus*, in the Berlin Museum. In 1856 Mr. Selater received examples from M. Sallé which he named *M. sulphureipygius*, comparing the species with the allied *M. barbatus*. The range of this bird in Mexico appears to be extremely limited, and probably strictly confined to the hot low-lying forests of the

State of Vera Cruz. It also occurs on the island of Cozumel, whence Mr. Gaumer sent us a single specimen. It is found too in British Honduras and in some abundance in Northern Vera Paz in the heavily forested country, lying at an elevation of about 1500 feet above the sea" (Salvin and Godman).

We can not follow Mr. Ridgway in reducing this form to a race of the Brazilian *M. mastacalis*, from which it is widely separated geographically, and consider it as distinct a species as any of the other forms herein admitted to recognition. Its ochraceous under parts are a character shared by only one other species, *M. villosus*, and should entitle it to stand alone.

Specimens examined.—Mexico: Orizaba, Vera Cruz, 1; Buena Vista, Vera Cruz, 2; Teapa, Tabasco, 2. British Honduras: Manatee Lagoon, 3; Quamin's Creek, 1; Toledo District, 2; unspecified, 1. Guatemala: Choctum, Vera Paz, 3; unspecified, 7. Total, 22.

Myiobius sulphureipygius aureatus Bangs.

- Myiobius sulphureipygius* (not *Tyrannula sulphureipygia* Sclater) CASSIN, Proc. Acad. Nat. Sci. Philadelphia, 1860, 144 (Rio Truando, Colombia).—LAWRENCE, Ann. Lyc. Nat. Hist. N. Y., VIII, 1863, 8 (Panama Railway, Panama).—SALVIN, Proc. Zool. Soc. London, 1867, 148 (Santa Fé, Veragua).—LAWRENCE, Ann. Lyc. Nat. Hist. N. Y., IX, 1868, 114 (Angostura, Costa Rica).—VON FRANTZIUS, Journ. f. Orn., XVII, 1869, 308 (Costa Rica).—SALVIN, Proc. Zool. Soc. London, 1870, 198 (Calobre, Bugaba, and Volcan de Chiriqui, Panama).—SCLATER, Ibis, 1873, 373 (Chontales, Nicaragua).—BOUCARD, Proc. Zool. Soc. London, 1878, 64 (Naranjo, Costa Rica).—NUTTING, Proc. U. S. Nat. Mus., VI, "1883, 1884, 402 (Los Sabalos, Nicaragua).—ZELEDON, Proc. U. S. Nat. Mus., VIII, 1885, 108 (Costa Rica).—ZELEDON, An. Mus. Nac. Costa Rica, I, 1887, 117 (Jiménez, Rio Suecio, and Pozo Azul de Pirris, Costa Rica).—SCLATER, Cat. Birds Brit. Mus., XIV, 1888, 200, part (Nicaragua, Costa Rica, and Panama localities and references).—RIDGWAY, Proc. U. S. Nat. Mus., X, 1888, 589 (Segovia River, Honduras).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, II, 1889, 57, part (Central American localities and references).—CHERRIE, Expl. Zool. Rio Naranjo, 1893, 15 (Rio Naranjo ["quebrada de Tocoril", Costa Rica; nesting]).—CHERRIE, Expl. Zool. en Costa Rica, 1891-2, 1893, 384 (Lagarto, Boruca, Terraba, and Buenos Aires, Costa Rica).—UNDERWOOD, Ibis, 1896, 438 (Volcano Miravalles, Costa Rica).—UNDERWOOD, Avifauna Costarriquena, 1899, 7 (Costa Rica).—BANGS, Auk, XVIII, 1901, 363 (Divala, Panama).—BANGS, Bull. Mus. Comp. Zool., XXXIX, 1903, 148 (Yaruca, Honduras).
- Myiobius villosus* (not of Sclater) HARTERT, Nov. Zool., V, 1898, 488 (Chimbo and Cachavi, Ecuador).
- Myiobius xanthopygius sulphureipygius* RIDGWAY, Bull. U. S. Nat. Mus., No. 50, IV, 1907, 490, part (Central American references and localities; meas.).—BANGS, Auk, XIV, 1907, 302 (Boruca, Paso Real, and Pozo del Rio Grande, Costa Rica).—STONE, Proc. Acad. Nat. Sci. Philadelphia, 1918, 267 (Canal Zone, Panama).

Myiobius xanthopygus aureatus BANGS, Proc. New England Zool. Club, IV, 1908, 27 (Divala, Panama; orig. descr.; type now in coll. Mus. Comp. Zool.; crit.).

Myiobius xanthopygius aureatus CARRIKER, Ann. Carnegie Mus., VI, 1910, 707 (Costa Rican localities and references; habits; nesting).

Myiobius sulphureipygius aureatus HELLMAYR, Proc. Zool. Soc. London, 1911, 1135, in text (Chiriqui; Pozo Azul, Costa Rica; crit.), 1136 (range). —CHAPMAN, Bull. Am. Mus. Nat. Hist., XXXVI, 1917, 466 (Alto Bonito, Choco, Baudo, Novita, Juntas de Tamana, San José, and Barbacoas, Colombia; Manavi, Ecuador; range; crit.).

Myiobius sulphureipygius villosus (not of Selater) HELLMAYR, Proc. Zool. Soc. London, 1911, 1135 (Nóvita, Colombia; crit.).

Subspecific characters.—Similar to *Myiobius sulphureipygius sulphureipygius*, but color of breast and sides paler, and yellow of median under parts slightly clearer in tone and more extended posteriorly, particularly on the flanks and crissum.

Measurements.—Male: wing, 62–66 (64); tail, 52–55 (53); bill, 10–12 (11); tarsus, 16.5–18.5 (17.8). Female: wing, 56–68 (62); tail, 49–56 (52); bill, 10–11.5 (10.8); tarsus, 14.5–18.5 (16.7).

Range.—Honduras south through Colombia to Ecuador, west of the Andes.

Remarks.—No. 66,574, Collection Carnegie Museum, is a young bird emerging from juvenal dress. The upper parts, wings, etc., are barred with ochraceous buff feather-tips; the tertiaries have broad outer margins of buffy; the vertical spot and the yellow of the rump are wanting, and the under parts are paler, duller, and more tinged with buffy, with the flanks and crissum nearly white.

M. sulphureipygius aureatus is not a strongly marked subspecies, but may be recognized in series by the characters above specified. Examples from Honduras and Nicaragua are clearly intermediate, but on the whole seem best referred to the southern form. Birds from western Costa Rica are pale by comparison, while those from Ecuador are bright; this is in part due to season, however, and no further subdivision of the species is advisable. The present race was formally distinguished by Mr. Bangs in 1908, after Mr. Ridgway had pointed out its characters. It occurs throughout much of the territory occupied by *M. atricaudus*, but in somewhat different haunts. In Costa Rica, according to Mr. Carriker, it is found "up to an altitude of about 3,000 feet on the Caribbean slope and 2,000 feet on the Pacific. It is found only in the forest, usually near a little brook, flitting about among the low limbs of the trees and shrubbery. The birds are very silent; in fact I do not think I have ever heard them utter more than a faint chirp." The same author describes the nest as a "purse-shaped mass of grass, roots and bark-fibres, about eighteen inches long, very slender at the upper end and about three and one-half inches in diameter at the largest part (about four inches from the bottom). The entrance to the cavity of the nest is on one side, four inches from the bottom and protected by an overhanging flap of the material of the nest.

The eggs are invariably two in number, creamy white, sometimes with a roseate tinge, and thickly speckled, streaked, and scrawled over the entire surface with bright chestnut-rufous, heavier at the larger end, in the form of a wreath or cap. Sometimes the markings have a decided purplish color." The nest is always suspended from a slender vine or the tip of a branch over water.

Specimens examined.—Honduras: Yaruca, 1; Segovia River, 1; Rio de las Piedras, 1. Nicaragua: Los Sabalos, 4; Rio Tuma, 1; Tuma, 2; Rio Grande, 1; Savala, 1; Las Canas, 2; Pena Blanca, 2. Costa Rica: Pozo Azul de Pirris, 10; Escazu(?), 1; Guapiles, 3; Volcano Turrialba, 1; Guacimo, 2; Rio Sicsola, 1; Miravalles, 1; El Hogar, 2; El Pozo de Terraba, 2; Boruca, 17; Buenos Aires, 1; La Concepcion, Jimenez, 1; Jimenez, 2; Bonilla, 1; Angostura, 2; Naranjo, 1; Tenorio, 4; La Vijagua, 8; El General, 13; Paso Real, 2; Carrillo, 3; Cariblanco de Sarapiquí, 2; Pozo del Rio Grande, 12. Panama: Divala, 2; Chiriqui, 1; Tacarcuna, 5; El Real, Rio Tuyra, 4; Cana, 1; Tapalisa, 1; Cerro Azul, 1; Cituro, Cuppe River, 1; Mt. Pirri, 1; unspecified, 1. Colombia: Murindo, 2; Quibdo, 1; El Tambo, 3; Andagoya, 3; Potedo, 3; Malagita, 3; Alto Bonito, 3; Baudo, Choco, 1; Choco, 2; Barbacoas, 2; San Jose, Cauca, 1; Juntas de Tamana, Cauca, 2; Novita, Cauca, 2. Ecuador: Junction Chanchan and Chiguaneay Rivers, 2; Bucay, Guayas, 2; Naranjo, Guayas, 1; Santa Rosa, Oro, 1; Rio de Oro, Manavi, 4. Total, 164.

Myiobius villosus villosus Sclater.

Myiobius villosus SCLATER, Proc. Zool. Soc. London, 1860, 93 (Nanegal [type-locality] and Rio Napo[?], Ecuador; orig. descr.; type now in coll. British Mus.), 465 (ref. orig. descr.; range).—SCLATER, Cat. Am. Birds, 1862, 226 (Nanegal and Rio Napo, Ecuador; ref. orig. descr.).—GRAY, Hand-List Birds, I, 1869, 359 (in list of species; range).—GIEBEL, Thes. Orn., II, 1875, 668 (ref. orig. descr.).—SCLATER and SALVIN, Proc. Zool. Soc. London, 1879, 514 (Frontino, Antioquia, Colombia; crit.).—TACZANOWSKI and VON BERLEPSCH, Proc. Zool. Soc. London, 1885, 91 (Machay and Mapoto, Ecuador), 116 (Nanegal, Ecuador).—SCLATER, Cat. Birds Brit. Mus., XIV, 1888, 201, part (Nanegal and Rio Napo, Ecuador; Frontino and "Bogotá," Colombia; descr.; references; crit.).—SALVADORI and FESTA, Bol. Mus. Zool. ed Anat. Comp. Torino, XIV, No. 362, 1899, 10 ("Foreste del Rio Peripa," Ecuador; Ecuadorean references; crit.).—SHARPE, Hand-List Birds, III, 1901, 131, part (range).—GOODFELLOW, Ibis, 1901, 706 (Gualea, Ecuador; crit.).—GÆLDI, Bol. Mus. Paraense, III, 1902, 292, part (Rio Napo, Ecuador, ex Sclater).—MENEGAUX, Mission Service Geog. Mes. Arc Méridien Equat. Amer. du Sud, IX, i, 1911, B 56 (Mindó, Ecuador; Ecuadorean records).—BRABOURNE and CHUBB, Birds S. Am. I, 1912, 296, part (ref. orig. descr.; range).—CHAPMAN, Bull. Am. Mus. Nat. Hist., XXXVI, 1917, 465, excl. extralimital records (Cocal and Ricaurte, Colombia; range; crit.).
Myiobius sulphureipygia var. *villosa* DUBOIS, Syn. Avium, I, 1902, 245 part (references; range).

Myiobius xanthopygus villosus RIDGWAY, Bull. U. S. Nat. Mus., No. 50, IV, 1907, 488, part (diag.; references; crit.).—BANGS, Proc. New England Zool. Club, IV, 1908, 27, in text (crit.; range).

Myiobius sulphureipygius villosus VON BERLEPSCH, Ornith., XIV, 1907, 481, (crit.).—HELLMAYR, Proc. Zool. Soc. London, 1911, 1136, part (range).

Description.—Male: above dark olive green, the pileum more or less suffused with Brussels brown, and with a large median vertical spot or stripe (partially concealed) of lemon chrome; rump Martius yellow; upper tail-coverts and tail black; wings dusky brownish, the coverts and remiges edged externally with medal bronze, the inner margins of the remiges buffy; under surface orange citrine, brightest on the breast and sides, the throat yellowish, and the middle of the abdomen barium yellow; "iris brown; feet grayish brown; bill black, flesh color below." Female similar to the male, but lacks the yellow vertical spot, the pileum being Brussels brown with a dark olive green wash.

Measurements.—Male (three specimens): wing, 70–71; tail, 60–61; bill, 11.5–12; tarsus, 18. Female (four specimens): wing, 66–68 (67); tail, 56–61 (58); bill, 11–12 (11.5); tarsus, 16–18 (17).

Range.—Andes of Colombia and Ecuador, in the Subtropical Zone.

Remarks.—*Myiobius villosus* is the Subtropical Zone representative of *M. sulphureipygius*, as conclusively shown by Dr. Chapman. It differs from the latter in its larger size and generally darker coloration, the yellow below being more restricted and the ochraceous more extended. Nearly all the specimens examined show an indistinct dusky mottling on the lower parts, from the breast down. Although closely related to the form of the Tropical Zone living immediately below, intergradation apparently does not take place, and it should be accorded specific rank. Sclater's type came from Nanegal, in western Ecuador, while a second specimen purported to have come from the Rio Napo, in eastern Ecuador—almost certainly an erroneous locality. We have not yet seen any specimens from western Ecuador, but there is every reason to believe that skins from western Colombia are the same. Dr. Chapman calls attention to the peculiarities of a "Bogotá" skin in the American Museum Collection (No. 42704). This specimen agrees closely with No. 59984, Collection Carnegie Museum, from Rio Negro, Colombia, and the two together differ from the remainder of the series in their brighter coloration below. Two forms are thus indicated, from the Eastern and Western Andes respectively, but it will be wise to await the receipt of additional material before formally characterizing them. The Peruvian birds, however, are undoubtedly distinct, and are described beyond. The present bird is not nearly so common or well known as the forms of this group from the Tropical Zone, nor, indeed, as many other Subtropical species.

Specimens examined.—Colombia: Rio Negro, 1; "Bogotá," 1; Cocal, Cauca, 1; Ricaurte, Narino, 2; near Pavas, 2. Total, 7.

***Myiobius villosus peruvianus*, subsp. nov.**

Myiobius villosus (not of Sclater, 1860) SCLATER and SALVIN, Proc. Zool. Soc. London, 1879, 615 (Tilotilo, Yungas, Bolivia).—TACZANOWSKI,

Proc. Zool. Soc. London, 1882, 21 (Huambo, Peru).—TACZANOWSKI, Orn. Perou, II, 1884, 299 (Amable-Maria and Huambo, Peru; descr.; references; habits).—SCLATER, Cat. Birds Brit. Mus., XIV, 1888, 201, part (Tilotilo, Yungas, Bolivia).—SHARPE, Hand-List Birds, III, 1901, 131, part (range).—VON BERLEPSCH and STOLZMANN, Proc. Zool. Soc. London, 1902, ii, 58 (Amable-Maria, Peru).—GÆLDI, Bol. Mus. Paranaense, III, 1902, 292, part (Yungas, Bolivia, ex Sclater).—VON BERLEPSCH and STOLZMAN, Ornith., XIII, 1906, 113 (Rio Cadena, Peru).—BRABOURNE and CHUBB, Birds S. Am., I, 1912, 296, part (Peru and Bolivia, in range).—CHAPMAN, Bull. Am. Mus. Nat. Hist., XXXVI, 1917, 465, part (Inca Mine, Peru).—BANGS and NOBLE, Auk, XXXV, 1918, 455 (Perico, Peru).

Myiobius xanthopygius (not *Platyrrhynchus xanthopygius* Spix) TACZANOWSKI, Proc. Zool. Soc. London, 1874, 537 (Amable-Maria, Peru).

Myiobius sulphureipygia var. *villosa* DUBOIS, Syn. Avium, I, 1902, 245, part (references; range).

Myiobius xanthopygius villosus RIDGWAY, Bull. U. S. Nat. Mus., No. 50, IV, 1907, 488, part (references).

Type, No. 132,749, Collection American Museum of Natural History, adult male; Rio Tavera (1600 feet), Peru, June 9, 1915; H. and C. Watkins.

Subspecific characters.—Similar in general to *Myiobius villosus villosus* Sclater of Ecuador and Colombia, but conspicuously duller and paler throughout, the upper parts not quite so green, and the rump paler, more baryta yellow; under parts much duller, nearer old gold than orange citrine, with the median yellow very pale, near naphthalene yellow.

Measurements.—Male (three specimens): wing, 68–71 (70); tail, 60–63 (62); bill, 11–12 (11.5); tarsus, 18–19 (18.5). Female (one specimen): wing, 67; tail, 58; bill, 12; tarsus, 18.

Range.—Andes of Peru and Bolivia (south at least to Yungas), in the Subtropical Zone.

Remarks.—This form differs from true *villosus* in the same way, and to an even greater degree, as does true *sulphureipygius* from its southern race *aureatus*. According to Stolzmann it has not been found below 3700 feet, but the specimen selected as type is marked as having been collected at 1600 feet, which, if correct, would indicate that the bird descends to a lower altitude than do most Subtropical Zone forms. Buckley secured it in the province of Yungas in Bolivia, but all the other published records are for Peru. Where it meets the range of the typical form we are unable to state; perhaps some of the Ecuador references may pertain here also.

Specimens examined.—Peru: Inca Mine, 1; Perico, 1; Rio Tavera (1600 feet), 1; Santo Domingo, 1. Total, 4.

***Myiobius atricaudus modestus* Todd.**

Myiobius barbatus atricaudus (not *Myiobius atricaudus* Lawrence) VON BERLEPSCH and HARTERT, Nov. Zool., IX, 1902, 49, excl. extralimital references (Caicara, Venezuela; crit.).

Myiobius modestus TODD, Ann. Carnegie Mus., VIII, 1912, 207 (Upata [type-locality], San Felix, and Altagracia, Venezuela; orig. descr.; type in coll. Carnegie Mus.; crit.).—CHERRIE, Mus. Brooklyn Inst. Sci. Bull., II, 1916, 242 (Caicara and River San Felix, Venezuela).

Subspecific characters.—Similar to *Myiobius atricaudus atricaudus*, but upper parts paler, and lower parts duller, more uniformly buffy, less yellowish.

Measurements.—Male (two specimens): wing, 60–62; tail, 59–60; bill, 10.5–11; tarsus, 17–18. Female (six specimens): wing, 57–58 (57); tail, 54–57 (56); bill, 10–10.5 (10); tarsus, 15–16.5 (15.5).

Range.—Eastern Venezuela, south of the Orinoco River, east to the Sierra Imataca.

Remarks.—“This form is based upon two adult [male] and three immature [=female] birds from San Felix, Altagracia, and Upata, localities in the region lying immediately south of the Orinoco east of Ciudad Bolivar. These are evidently the same as the two skins from Caicara (farther up the Orinoco) doubtfully referred to *Myiobius barbatus atricaudus* Lawrence by Messrs. Berlepsch and Hartert (*Novitates Zoologicae*, IX, 1902, 49). Upon comparison with an ample series of the latter from Costa Rica, however, they prove to be very distinct, being decidedly paler olivaceous above, and more uniform below, with less of the buffy suffusion on the breast and sides, and the tibiae and under tail-coverts much paler, more buffy. From true *M. barbatus*, of which I have three examples before me, they are still more different, and may be distinguished at a glance by their deep black tails” (Todd, l. c.).

With a much larger series of true *atricaudus* at hand than was available when the above remarks were penned, it is evident that some qualifications are required. *M. modestus* is more closely related to *M. atricaudus* than at first was thought, and should stand as a subspecies thereof. It differs in its lighter, duller coloration, the lower parts appearing less yellowish, and more uniformly buffy, with the upper parts a shade paler also. In the original description it is stated that there is “less of the buffy suffusion on the breast and sides” than in *atricaudus*, but the fact is that this is only apparent because of the dullness of the yellow color.

Since the respective ranges of *M. barbatus* and the present form are known to approach each other very closely in Venezuela, if, indeed, they do not actually overlap, without any signs of intergradation in the area involved, we feel justified in keeping them specifically distinct. Two specimens from Caicara, collected by Mr. Cherrie, and examined by the writer in this connection, confirm his suspicions as to the identity of the birds from this locality referred to by Messrs. von Berlepsch and Hartert.

Specimens examined.—Venezuela: San Felix, 2; Upata, 2; Altagracia, 1; Caicara, 2; La Cascabel, Rio San Felix, 1. Total, 8.

Myiobius atricaudus suffusus Todd.

Myiobius modestus suffusus TODD, Proc. Biol. Soc. Washington, XXX, 1917, 4 (Turbaco, Colombia; orig. descr.; type in coll. Carnegie Mus.).

Subspecific characters.—Similar to *Myiobius atricaudus atricaudus* Lawrence, but under parts paler and more uniform, with less buffy suffusion on the breast; upper surface also slightly paler.

Measurements.—Male (four specimens): wing, 60–62 (61); tail, 56–58 (57); bill, 10–11 (10.5); tarsus, 18–19 (18.5). Female (three specimens): wing, 55–57 (56); tail, 54–57 (55); bill, 9.5–10 (10); tarsus, 16–16.5 (16).

Range.—Valley of the Rio Sinu east to the valley of the middle Rio Magdalena, Colombia.

Remarks.—In the light of the much larger series of true *atricaudus* examined in this connection the characters originally ascribed to this form assume somewhat less importance. It is in fact a barely recognizable race of *atricaudus*, differing in its paler, less buffy coloration below, and paler upper parts, in which latter respect it agrees with *modestus*. It appears to be confined to the northern part of the area occupied by the Cauca-Magdalena Fauna in Colombia (as defined by Dr. Chapman), since a specimen from Malena, farther up the Magdalene Valley, is clearly referable to *atricaudus*.

Specimens examined.—Colombia: Turbaco, 5; Gamarra, 1; Aguachica, 1. Total, 7.

Myiobius atricaudus atricaudus Lawrence.

Myiobius barbatus (not *Muscicapa barbata* Gmelin) SCLATER, Proc. Zool. Soc. London, 1860, 282 (Babahoyo, Ecuador), 295 (Esmeraldas, Ecuador).—LAWRENCE, Ann. Lyc. Nat. Hist. N. Y., VII, 1861, 328 (Panama Railway, Panama).—SCLATER, Cat. Am. Birds, 1862, 225, excl. references part (Esmeraldas and Babahoyo, Ecuador).—TACZANOWSKI, Proc. Zool. Soc. London, 1877, 332 (Palma, Ecuador).—SCLATER and SALVIN, Proc. Zool. Soc. London, 1879, 514 (Santa Elena, Antioquia, Colombia; crit.).—HEINE and REICHENOW, Nom. Mus. Heineani Orn., 1883, 144 (Babahoyo, Ecuador).—TACZANOWSKI and VON BERLEPSCH, Proc. Zool. Soc. London, 1885, 118 (Babahoyo and Esmeraldas, Ecuador, ex Sclater).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, II, 1889, 56, part Costa Rica and Panama references and localities; crit.).—UNDERWOOD, Avifauna Costarriquena, 1899, 7 (Costa Rica).—SALVADORI and FESTA, Bol. Mus. Zool. ed Anat. Comp. Torino, XIV, No. 362, 1899, 10 ("Forreste del Rio Peripa," Ecuador; Ecuadorean references).—GÆLDI, Bol. Mus. Paraense, III, 1902, 292 (Sarayacu, Ecuador, ex Sclater).

Myiobius atricaudus LAWRENCE, Ibis, 1863, 183 (Panama; orig. descr.; types now in coll. Am. Mus. Nat. Hist.).—LAWRENCE, Ann. Lyc. Nat. Hist. N. Y., VIII, 1863, 8 (Panama Railway, Panama; crit.).—SCLATER and SALVIN, Proc. Zool. Soc. London, 1864, 360 ([Lion Hill?], Panama; crit.).—SALVIN, Proc. Zool. Soc. London, 1870, 198 (Calovevora, Panama).—GIEBEL, Thes. Orn., II, 1875, 663 (ref. orig. descr.; range).—SCLATER and SALVIN, Proc. Zool. Soc. London, 1879, 514 (crit.).—RIDGWAY, Proc. U. S. Nat. Mus., V, 1882, 396, note ("La Palma," Costa Rica, and Panama; crit.).—NUTTING, Proc. U. S. Nat. Mus., V, 1882, 396 ("La Palma," Costa Rica).—ZELEDON, Proc. U. S. Nat. Mus., VIII, 1885, 108 (Costa Rica).—ZELEDON, An. Mus. Nac. Costa Rica,

I, 1887, 117 (Costa Rica).—BANGS, Proc. New England Zool. Club, II, 1900, 22 (Loma del Leon [Lion Hill], Panama).—TODD, Ann. Carnegie Mus., VIII, 1912, 208, in text (crit.).—BRABOURNE and CHUBB, Birds S. Am., I, 1912, 296 (ref. orig. descr.; range).

Myiobius atricauda GRAY, Hand-List Birds, I, 1869, 359 (in list of species; range).—SHARPE, Hand-List Birds, III, 1901, 131 (range).—THAYER and BANGS, Bull. Mus. Comp. Zool., XLVI, 1906, 219 (savanna of Panama).—VON BERLEPSCH, Ornith., XIV, 1907, 481, in text (crit.).

[*Myiobius barbatus*] a. subsp. *atricauda* SCLATER, Cat. Birds Brit. Mus., XIV, 1888, 200, part (localities and references for Panama, Colombia, and Ecuador; crit.).

Myiobius barbatus atricaudus VON BERLEPSCH and HARTERT, Nov. Zool., IX, 1902, 49, part (Costa Rica; crit.).—HELLMAYR, Abhand. K. Bayerischen Akad. Wiss., II Kl., XXII, 1906, 642 (Paraiso, Panama; S. Javier and Pambilar, Ecuador; diag.; meas.; range).—RIDGWAY, Bull. U. S. Nat. Mus., No. 50, IV, 1907, 487 (diag.), 488, excl. extralimital localities and references part (descr.; range; meas.; references).—CARRIKER, Ann. Carnegie Mus., VI, 1910, 708 (Costa Rican localities and references; habits).—HELLMAYR, Proc. Zool. Soc. London, 1911, 1135, 1136 (range; crit.).—CHAPMAN, Bull. Am. Mus. Nat. Hist., XXXVI, 1917, 465 (Dabeiba, Caldas, Barbacoas, Rio Frio, and Malena, Colombia; range).—STONE, Proc. Acad. Nat. Sci. Philadelphia, 1918, 267 (Gatun, Panama; nesting).

Myiobius barbatus var. *atricauda* DUBOIS, Syn. Avium, I, 1902, 245 (ref. orig. descr.; range).

Myiobius barbatus atricauda BANGS, Auk, XIV, 1907, 302 (Boruca and Pozo del Rio Grande, Costa Rica).

Description.—Above between olive green and dark citrine, the pileum slightly darker, and with a partially concealed vertical spot of lemon chrome; rump Martius yellow; wings dusky, with outer margins of olive green and pale grayish inner margins below; upper tail-coverts and tail black; under surface barium yellow, the throat, breast, sides, tibiae, and crissum more or less strongly shaded with old gold or honey yellow; "iris brown, feet leaden blue; bill black, flesh-colored below." (Female with the yellow vertical spot restricted or wanting).

Measurements.—Male: wing, 56–62 (59); tail, 55–60 (58.5); bill, 9.5–11 (10.3); tarsus, 16.5–18 (17.5). Female: wing, 52–57 (55); tail, 53–59 (56); bill, 9.5–10 (9.6); tarsus, 14.5–17 (16).

Range.—Western Costa Rica (Gulf of Nicoya) southward through Panama and through western Colombia and Ecuador to northwestern Peru.

Remarks.—The proper status of the present bird has been the subject for considerable discussion in the past. Described by Lawrence in 1863 from Panama specimens, it was soon discovered to be the same form as had already been recorded as *barbatus* from western Ecuador. With a restricted representation of both forms before them, Salvin and Godman in 1889 could find "no material difference" between birds from Panama and those

from Guiana. Selater in 1888 had admitted the former as a subspecies, but with reservations. Mr. Ridgway and Mr. Hellmayr agree in making *atricaudus* a subspecies of *barbatus*, and this course has been followed by other recent authors. If it were only a question of the color of the tail such a treatment might be indorsed, but there are other differences. In *atricaudus* the upper parts are tinged with citrine, the yellow vertical spot is smaller and very slightly paler, and the yellow of the rump is more extended than in *barbatus*. Below the yellow color is a little deeper, and the breast and sides are shaded with honey yellow or old gold, instead of citrine, as in *barbatus*. Moreover, the proportions are different, *atricaudus* having the tail equal to or even longer than the wing, and obviously rounded, while in *barbatus* it is decidedly shorter, and nearly even. Taking all these facts into consideration, and bearing in mind that in Venezuela a race of *atricaudus* approximates and probably overlaps *barbatus* in range, we are disposed to accord the present bird specific rank, believing that it is fully as much entitled to such treatment as certain other forms whose status is not in question.

M. atricaudus atricaudus ranges in the Tropical Zone from western Costa Rica to northwestern Peru (Tumbez), west of the Andes, but invading the Cauca and Magdalena Valleys in Colombia. It is a forest-dweller, according to Mr. Carriker "always seen rather high up in the trees, flitting from branch to branch much like a warbler or some of the vireos, and usually has its tail considerably spread, which distinguishes it at once [from *M. sulphureipygius aureatus*] by its greater length and blackness. This species is also usually seen farther away from creeks and streams than the other, sometimes high up in the crest of a ridge, far from any water, a situation in which I have never seen *aureatus*." Dr. Stone describes a nest collected by the late L. L. Jewel as a "pendant bell-shaped structure with entrance beneath the passage going up and over into the nest cavity; made of dead leaves and fine vegetable fiber, lined with vegetable silk and fine fibers. Situated on a branch overhanging a stream in the forest. Eggs two, rich deep rufous, wreathed about the larger end with deeper shade of the same, .65 x .50 in."

Specimens examined.—Costa Rica: Pozo Azul de Pirris, 4; Boruca, 12; Buenos Aires, 4; Pozo del Río Grande, 3; El General, 2; La Palma, 1. Panama: Panama, 4; Divala, 1; Loma del leon (Lion Hill), 3; Gatun, 7; Natá-Coelé, 1; Chiriqui, 3; Boqueron, 2; La Chorrera, 1; El Real, Rio Tuyra, 1; Tabernilla, 3; Porto Bello, 1; Corozal, 1; Matachin, 1; Miraflores, 1; unspecified, 2. Colombia: Caldas, 3; Yumbo, 9; Barbacoas, 2; Malena, 1; Rio Frio, 1; Dabeiba, 1. Ecuador: Bucay, Guayas, 4; Esmeraldas, 5; Rio de Oro, 2; Naranjo, 2; Puna Island, 1; Duran, Guayas, 1; Zamora, Loja, 1. Peru: Tumbez, 1. Total, 92.

***Myiobius ridgwayi* von Berlepsch.**

Myiobius xanthopygius (not *Platyrrhynchus xanthopygus* Spix) VON PELZELN, Orn. Bras., ii, 1869, 113, part (Luiz d'Almeida and Ypanema, Brazil; meas.; crit.).

Myiobius ridgwayi VON BERLEPSCH, Auk, V, 1888, 457 (Petropolis, Prov. Rio Janeiro, Brazil; orig. descr.; type in coll. H. von Berlepsch; crit.).—SHARPE, Hand-List Birds, III, 1901, 131 (ref. orig. descr.; range).—HELLMAYR, Abhand. K. Bayerischen Akad. Wiss., II Kl., XXII, 1906, 643 (Victoria, Brazil; von Pelzeln's records; meas.; crit.).—RIDGWAY, Bull. U. S. Nat. Mus., No. 50, IV, 1907, 488, excl. syn. part? (diag.; ref. orig. descr.).—VON IHERING, Aves do Brazil, 1907, 290 (Brazilian localities and references).—VON BERLEPSCH, Ornith., XIV, 1907, 481 (crit.).—TODD, Ann. Carnegie Mus., VIII, 1912, 208, in text (crit.).—BRABOURNE and CHUBB, Birds S. Am., I, 1912, 296 (ref. orig. descr.; range).

Myiobius barbatus var. *ridgwayi* DUBOIS, Syn. Avium, I, 1902, 245 (ref. orig. descr.; range).

Description.—Male: above light brownish olive; small vertical spot pale lemon yellow; rump yellowish buff (near mustard yellow); tail (with sometimes longer upper coverts) dull black; wings dusky brown with more or less brownish olive edgings; below (including under wing-coverts) yellowish buff, almost uniform, but deepening a little on the crissum; inner edges of remiges below more or less buffy. Female similar, but the vertical spot (usually?) wanting.

Measurements.—Male (two specimens): wing, 58–59; tail, 58–59; bill, 10–10.5; tarsus, 16–16.5. Female (one specimen): wing, 55; tail, 56; bill, 10.

Range.—Southern Brazil, in the provinces of São Paulo, Rio de Janeiro, and Espirito Santo.

Remarks.—This is a very distinct species, readily known by its uniform buffy yellow rump and lower parts. These peculiarities were first remarked by von Pelzeln in the case of three specimens collected by Natterer at Ypanema and Luiz d'Almeida, southern Brazil, but the species as such remained unrecognized and undescribed until 1888, when von Berlepsch formally characterized it on the strength of a specimen in his own collection from Petropolis (near Rio Janeiro), Brazil, and another in the collection of the U. S. National Museum without exact locality, but probably from the same general region. In 1906 Mr. Hellmayr discovered that the specimens referred to as different by von Pelzeln many years before really belonged to the present species. Mr. Ridgway refers several more recent records by von Ihering here also, but inasmuch as this author discriminates between *ridgwayi* and *mastacalis* in his work on the Birds of Brazil we are inclined to accept his determination. Little is known of the present species, and very few specimens appear to be extant. While its range is known to be included in that of *Myiobius mastacalis*, it does not yet appear whether the two species are actually found together, or whether *M. ridgwayi* occupies the higher and *M. mastacalis* the lower levels. It seems to be more closely related to *M. atricaudus* than to any other form of this generic group.

Specimens examined.—Brazil: Petropolis, 1; Therezopolis, Organ Mountains, 1; unspecified, 2. Total, 4.